Nov. 10, 1925.

C. T. WEYMANN

1,561,129

DOOR LATCH

Filed Sept. 14, 1923

2 Sheets-Sheet 1

Fig.1

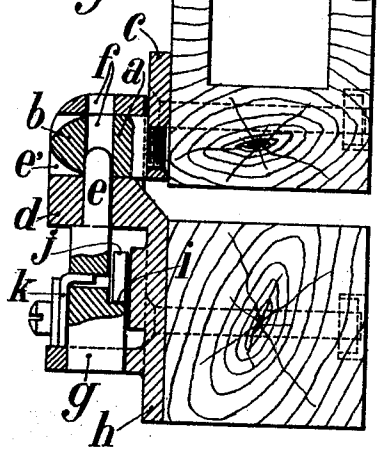


Fig.3

Inventor
C. T. Weymann
By Marks & Clerk
Attys.

Nov. 10, 1925.

1,561,129

C. T. WEYMANN

DOOR LATCH

Filed Sept. 14, 1923

2 Sheets-Sheet 2

Fig.2

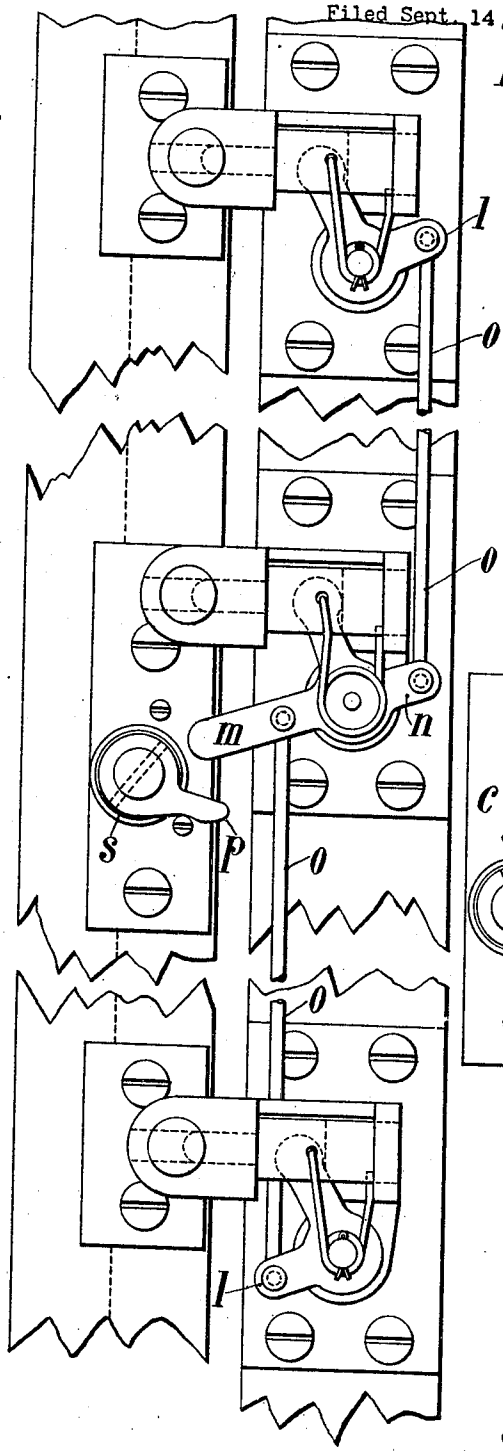
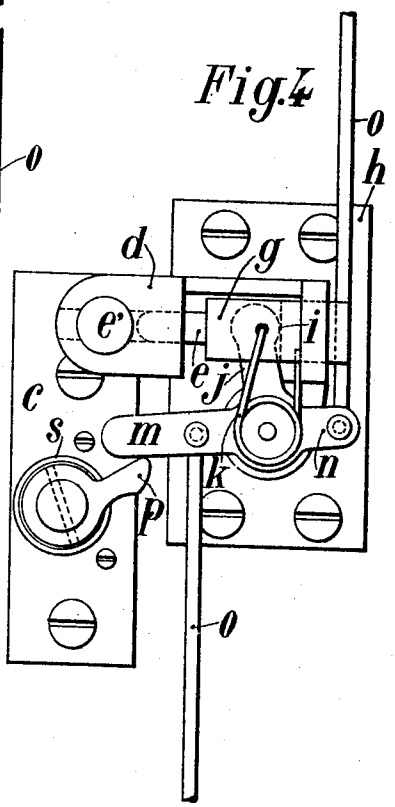


Fig.4



Inventor
C. T. Weymann
By Marks & Clerk
Attys.

Patented Nov. 10, 1925. 1,561,129

UNITED STATES PATENT OFFICE.

CHARLES TORRES WEYMANN, OF PARIS, FRANCE.

DOOR LATCH.

Application filed September 14, 1923. Serial No. 662,784.

To all whom it may concern:

Be it known that I, CHARLES TORRES WEYMANN, a citizen of the French Republic, residing 20 Rue Troyon, Paris, France, have invented new and useful Improvements in Door Latches, of which the following is the specification.

The closing and locking of two panels or of a panel mounted in a dead sash, more particularly in the case of a door for motor vehicle, are usually obtained by two distinct members, namely a bolt and its staple. This locking device can be constituted by bolts at the top and base of the door, acting as a basquill-bolt or in a more simple manner, by a wedging system comprising a member in the shape of a flat or conical wedge.

The invention has for its object improvements in these closing and locking systems, these improvements consist essentially in that use is made of one and the same member for simultaneously effecting these two functions. More particularly, the panel or the dead sash carries a fixed cylindrical bolt, having a conical end, which enters, upon closing, in a cylindrical staple mounted to the other element (dead sash or panel); this staple being provided with a locking member closing automatically and the opening of which is positively controlled, this locking member being adapted to immobilize the said bolt in the staple. These arrangements also render by the combination of several similar members on one and the same panel, two opening panels completely rigid with each other or an opening panel rigid with a dead sash, whatever may be their relative displacements.

In the accompanying drawing and by way of example:

Fig. 1 illustrates in vertical section and closing position the closing and locking system forming the subject-matter of the present invention.

Figs. 2 and 3 illustrate in elevation and side view the combination of the three closing and locking members and the mechanism of control at a distance permitting their simultaneous opening (the parts being illustrated in closing position).

Fig. 4 is a view of the control system and of a closing and locking member, in the case of opening.

As indicated in the foregoing, the mechanism which is to effect both the closing and locking is constituted:

1. By a male part (secured either to the opening panel, or to the dead sash) this part or bolt being formed by a cylindrical tenon a, having a cylindrical end b which is secured on the base c.

2. By a female part (secured either to the dead sash, or to the opening panel), this part or staple having a boss d in the cylindrical bore e of which can enter the bolt a upon closing. This staple carries a system for locking the bolt. For that purpose, the latter as well as the boss d in which it enters, is perforated with a hole f at right angles to its axis of symmetry. This hole serves as a housing for a finger e depending from a slide-block g which is guided in the frame k of the staple. Laterally, this slide-block forms a recess i for permitting the passage of the arm of a lever j pivoted on the platen of the staple h. A spring k made of a piano string, winds on the pivotal axis of this lever and its branches take respectively a bearing on the fixed frame h and on the slide-block g actuating the locking member e. This spring k is so arranged as to produce a thrust on the slide-block g and consequently to insert the locking member e in its housing f. Normally, the locking member e automatically occupies the position determining the locking of the bolt a in the staple d. For producing the unlocking, the rocking of the lever j must therefore be determined by placing the returning spring k under tension. This operation can be obtained by any suitable means.

Besides the simplicity of the system playing the double part indicated, it will be seen that without producing any wedging nor any reaction on the hinges, one obtains, owing to the cylindrical bolt a entering in the staple, of the same shape, a complete locking of the two elements: opening panel and dead sash.

These arrangements are still more efficient when several similar members are combined on the same panel (Figs. 2–3) the bolts of these various members being then rendered rigid by a transmission of movement which allows to actuate them simultaneously at a distance.

In the example shown have been combined, by way of example, three members

one of which is centrally arranged and the others respectively arranged at the top and bottom of the panel. Control levers *j* for the locking members carry: the extreme ones, arms opposing to each other relatively to their pivotal axis, the central one, two diametrically opposed arms *m*, *n*. These arms are connected two by two by coupling rods. *o*.

Besides, for the control, one of the arms *m* of the central member is extended so as to be capable of being engaged by a cam *p* rigidly mounted on the axis of the operating handles *r* subjected to the action of a spring *s*. This spring *s* acts for automatically bringing back the cam *p* in such a position that it does not engage with the control lever *m*, the locking members *e*, under the action of their springs *k* being in position for locking the corresponding bolts *a*.

For opening the panel, the handle *r* is therefore turned as usual, the cam *s* acts on the lever *m* and through the transmission *o* determines the withdrawal of the locking members *e* (Fig. 4). By pushing or pulling the panel, the bolts *a* are separated from their staples *d*.

As soon as the opening takes place, the locking members *e* take again their closing position in the staples. For closing the door, it is only necessary to push or pull the same until the locking elements engage one another. If a relative displacement of the door has taken place relatively to the door frame, the conical ends *b* of the bolts *a* enter the staples *d* and re-establish the alignment. The locking members *e* are withdrawn so that the bolts *a* are adjusted in their staples and, at the end of their movement, the locking members *e* automatically enter the bolts *a* for positively locking them.

It is obvious that the closing members might not be, as shown, arranged in a straight line and that use could be made of any suitable transmission of movement (rigid, flexible, etc.) for connecting them to an independent control member placed at a distance.

What I claim as my invention and desire to secure by Letters Patent is:

1. In a system for locking hinged vehicle doors, a door member and a door frame member, catches mounted on one of said members and including cylindrical bores having their axes perpendicular to the plane of the door, cylindro-conical bolts mounted on the other member and adapted to enter said bores, and means for locking the bolts in the cylindrical bores.

2. In a system for locking hinged vehicle doors, a door member and a door frame member, catches mounted on one of said members and including cylindrical bores having their axes arranged substantially perpendicular to the plane of the door member, cylindro-conical bolts mounted on the other member and adapted to enter said bores, and spring-pressed pins slidably mounted in the catches parallel to the plane of the door member and arranged to project into said cylindrical ports and to interlock with the cylindro-conical bolts.

3. In a system for locking hinged vehicle doors, a door member and a door frame member, catches mounted on one of said members and including cylindrical ports having their axes arranged substantially perpendicular to the plane of the door member, cylindro-conical bolts mounted on the other member, pins slidably mounted in the catches parallel to the plane of the door and adapted to project in to the cylindrical bores and engage with the corresponding cylindro-conical bolts, substantially V-shaped springs mounted on one of said members and each having one of its ends connected to one of said pins and an abutment on one of said members to engage the other end of the spring.

4. A system for locking hinged vehicle doors as claimed in claim 3 including pivots for the springs, bell crank levers mounted on said pivots, each pin having an opening to receive one of the arms of the corresponding bell crank lever, actuating elements connected to the other arms of the bell crank levers, one of said bell crank levers having a third arm fixed to the same, and an oscillating shaft provided with a cam to engage said third arm and simultaneously actuate all of said pins.

5. In a door latch, the combination of two units, one adapted to be secured to the door and the other to the dead sash, one of the units consisting of a fixed cylindrical bolt having a conical end and a transverse hole, and the other unit consisting of a fixed member having an opening into which said fixed bolt is adapted to snugly fit when the door is closed, a sliding bolt adapted to fit snugly in said transverse hole in said fixed bolt and having a rounded end adapted to engage the conical end of said fixed bolt to retract the sliding bolt, a spring against the action of which the sliding bolt is so retracted and adapted to snap the sliding bolt outwardly into the transverse hole in the fixed bolt, and a handle for retracting the sliding bolt against the action of said spring to withdraw the end of the sliding bolt from the transverse hole in said fixed bolt to permit the door to be opened.

In testimony whereof I have signed my name to this specification.

CHARLES TORRES WEYMANN.